First record of *Astyanax xiru* Lucena, Castro & Bertaco, 2013 (Characiformes: Characidae) from the río Uruguay basin of Argentina.

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Abstract
Astyanax xiru is registered for the first time from freshwaters of Argentina in the province of Misiones. This species was found in the Middle río Uruguay basin: arroyo Yaboti-Mini and its affluent arroyo San Juan; arroyos Fortaleza, Oveja Negra and Trigueño, tributaries of the arroyo Yaboti-Guazú; and río Pepirí-Guazú, the only stream in Argentinean territory included in the Upper Uruguay freshwater ecoregion.

Introduction
The genus *Astyanax* Baird & Girard with more than 140 species is the most speciose genus within Characidae (Eschmeyer & Fricke, 2015). *Astyanax* has a widespread distribution in the Neotropics, ranging from the Southern USA to Northern Patagonia in Argentina (Eschmeyer & Fricke, 2015). From Argentina 30 species of this genus have previously been registered (Mirande & Koerber, 2015; Teran et al., 2016). From eight of them records in the río Uruguay basin are known: *A. eigenmanniorum*, *A. dissensus*, *A. lacustris*, *A. ojiara*, *A. paris*, *A. rutilus*, *A. saguazu*, and *A. stenohalinus*. The aim of this paper is to report for the first time from Argentina the presence of *A. xiru* from the río Uruguay basin.
Counts and measurements were taken following Fink & Weitzman (1974). Measurements were taken point to point with a caliper. The identification of *Astyanax xiru* was made based on the original description published by Lucena et al. (2013).

fig. 1. *Astyanax xiru*, uppon capture, MLP 10919, arroyo Fortaleza, affluent of the arroyo Yabotí-Guazú

Astyanax xiru (fig. 1). Morphometric characters are given in Table 1.

The specimens analyzed herein present most of the characters proposed by Lucena et al. (2013) in the original description of *Astyanax xiru*: two humeral spots (the first humeral spot vertically elongate with upper portion wider and lower portion narrow), the presence of a conspicuous wide lateral band, conspicuous caudal spot, anal-fin rays iii-iv,19 to 23; pectoral-fin rays i,10 to 12; pelvic-fin rays i,7; lateral line scales 37 to 39; scale rows between dorsal-fin origin and lateral line 6 or 6 ½; scale rows between lateral line and pelvic-fin origin 4 or 5; predorsal scales 10 to 13; scale rows around caudal peduncle 14 to 16; outer row of premaxilla with pentacuspid teeth; inner premaxilla row with heptacuspid teeth; one maxillary tooth tri- to pentacuspid; 18 to 22 branched anal-fin rays; 20 gill-rakers (1 c&s); body depth 32.3-37.5% SL; pelvic-fin length 13.6-17.1% SL; dorsal-fin length 21.1-25.4% SL (more characters can be seen in Table 1). However we found some differences respect to the original description (OD): dorsal-fin rays 3i,8 to 9 (first unbranched ray very small vs. 2i,9; scale sheath along anal-fin base 8-12 scales vs. 6-10 scales (OD); shorter caudal peduncle length 12.6-13.5% SL vs. 13.3-15.9 (OD); longer snout length 25.0-27.9 % HL vs. 19.0-24.0 (OD); shorter orbital diameter 30.5-32.0 % HL vs. 32.1-36.6 (OD); absence of bony hooks in all fins of males vs. presence in anal and pelvic-fin rays (OD); branched anal-fin rays 19-23 vs. 18-22 (OD).

Morphometric data used in the original description of *A. xiru* by Lucena et al. (2013) only include the type series from Laguna dos Patos system. However, these authors noted that the additional specimens from the río Uruguay basin were similar to those of type material. Because there is no data available from these additional specimens in the original description, we cannot say whether the differences found in our specimens are indicators of an intraspecific variation.

Distribution

All specimens considered herein were collected in the Middle río Uruguay basin: arroyo Yabotí-Miní and its affluent arroyo San Juan; arroyos Fortaleza, Oveja Negra and Trigueño, tributaries of the arroyo Yabotí-Guazú, and río Pepirí-Guazú, the only river of Argentina included in the Upper Uruguay freshwater ecoregion (Hales & Petry, 2015) (figs. 2-7).

Material examined

Misiones province. Río Uruguay basin. MLP 10918, 4 exs. 71.4-92.9 mm SL (1 c&s), arroyo San Juan, affluent of arroyo Yabotí-Miní (26º40’26.68”S - 53º56´46.77”W), February 2012 | MLP 10919, 4 exs, 69.6-97.4 SL, arroyo Fortaleza, affluent of arroyo Yabotí-Guazú (26º45’57.1”S - 54º10´51.7”W), November 2011 | MLP 10920, 2 exs., 77.7-97.8 SL, arroyo Yabotí-Miní (26º43’19.91”S - 53º50´36.19”W), February 2012 | MLP 10921, 1 ex., 98.0 mm SL., arroyo Oveja Negra, affluent of arroyo Yabotí-Guazú (27º08’22.7”S - 53º55´45.9”W), November 2011 | MLP 10922, 2 exs., 70.1-76.1 mm SL., arroyo Trigueño, affluent of arroyo Yabotí-Guazú (27º08’57.9”S - 53º57´21.3”W), December 2010 | MLP 10923, 1 ex., 79.9 mm SL., río Pepirí-Guazú (26º20’07.0”S - 53º41´00.7”W), December 2014.

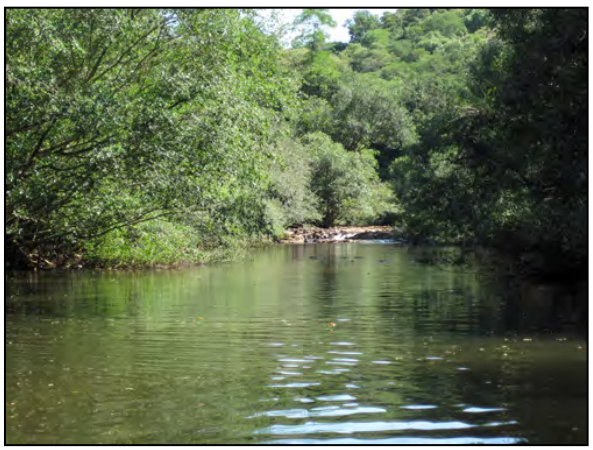

fig. 2. Arroyo Yabotí-Miní

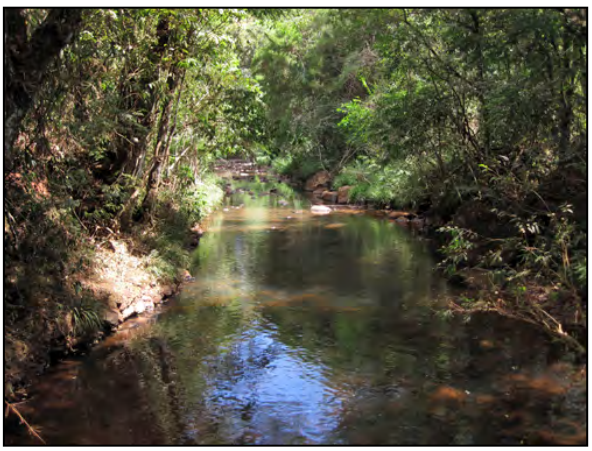

fig. 3. Arroyo San Juan

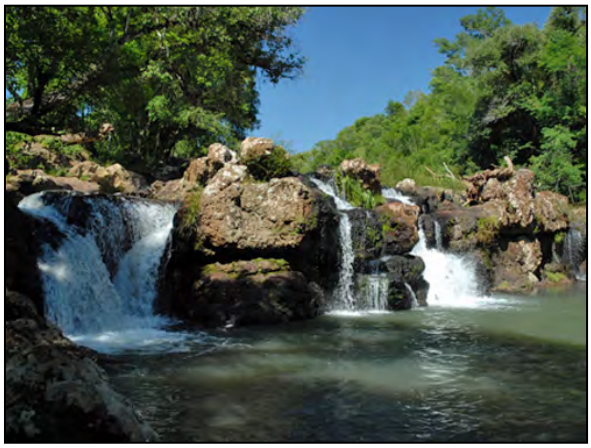

fig. 4. Arroyo Fortaleza

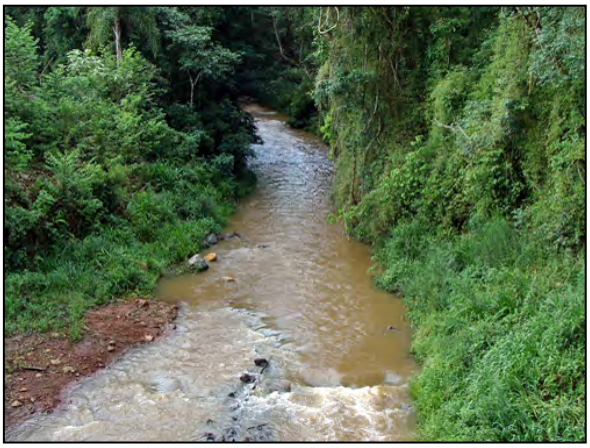

fig. 5. Arroyo Oveja Negra

fig. 6. Río Pepirí-Guazú

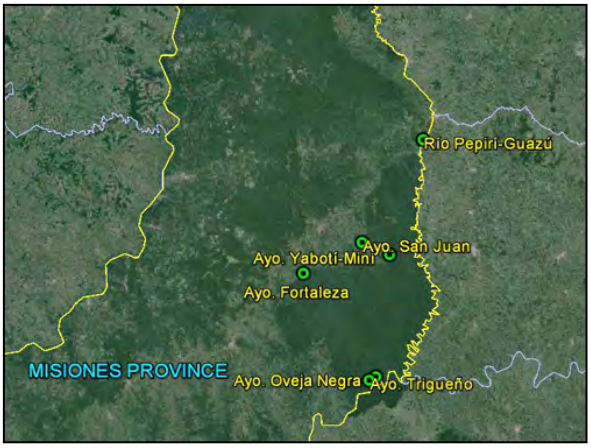

fig. 7. Collecting sites of *A. xiru* in Misiones, Argentina

Acknowledgements

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Table 1. Morphometric of eleven specimens of *Astyanax xiru*.

	mean	range	SD
standard length (mm)	84,9	69,6-99,8	
percentage of standard length			
predorsal distance	50,6	49,4-52,7	1,11
prepelvic distance	49,7	48,0-51,6	1,17
prepectoral distance	25,8	24,8-27,3	0,75
preanal distance	67,9	66,7-70,0	1,19
depth at dorsal fin origin	34,2	32,5-36,4	1,46
dorsal fin length	23,7	21,4-24,9	1,19
anal fin base length	25,4	23,0-26,8	1,34
pectoral fin length	20,5	19,0-22,6	0,98
pelvic fin length	15,2	14,3-16,8	0,83
pectoral to pelvic fin distance	25,9	24,0-28,1	1,56
pelvic to anal fin distance	20,4	18,4-22,0	1,19
head length	26,6	25,6-27,5	0,63
caudal peduncle depth	11,5	10,8-12,5	0,58
caudal peduncle length	12,9	12,6-13,5	0,34
percentage of head length			
orbital diameter	31,4	30,5-32,9	0,90
interorbital width	33,0	31,3-34,4	1,11
snout length	26,3	25,0-27,9	0,95
maxillary length	24,5	23,0-26,2	1,15
upper jaw length	40,2	39,2-41,3	0,79

recommended form for reference:
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